

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A wiring board comprising:

a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and

a plurality of metal terminal pads disposed on said first main surface,

wherein:

each of said metal terminal pads has a structure in which a Cu-plated layer is disposed on a side of said first main surface and an Au-plated layer is disposed in an outermost surface layer portion of said metal terminal pad, while an electroless Ni-plated layer having a P content not higher than 3% by weight is disposed as a barrier metal layer between said Cu-plated layer and said Au-plated layer.

2. (currently amended): A wiring board comprising:

a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and

a plurality of metal terminal pads disposed on said first main surface,

wherein:

each of said metal terminal pads has a structure in which a layer containing Cu is disposed on a side of said first main surface and a layer containing Au is disposed in an outermost surface layer portion of said metal terminal pad, while a layer containing Ni which has is an electroless Ni-plated layer having a P content not higher than 3% by weight is disposed as a barrier metal layer between said layer containing Cu and said layer containing Au layer.

3. (original): The wiring board according to claim 1, wherein said electroless Ni-plated layer is an Ni-B-based electroless Ni-plated layer.

4. (original): The wiring board according to claim 1, wherein said electroless Ni-plated layer is in direct contact with said Au-plated layer, and said Au-plated layer is made of an electroless reduction Au-plated layer.

5. (original): The wiring board according to claim 1, wherein said electroless Ni-plated layer has a thickness of from 2 to 7 μm and the Au-plated layer has a thickness of from 0.03 to 0.1 μm .

6. (original): A wiring board comprising:
a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and

a plurality of metal terminal pads disposed on said first main surface;

wherein:

each of said metal terminal pads has a structure in which a Cu-plated layer is disposed on a side of said first main surface and an Au-plated layer is disposed in an outermost surface layer

portion of said metal terminal pad, while a platinum-metal-based electroless plated layer is disposed as a barrier metal layer between said Cu-plated layer and said Au-plated layer.

7. (currently amended): A wiring board comprising:

a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and

a plurality of metal terminal pads disposed on said first main surface;

wherein:

each of said metal terminal pads has a structure in which a layer containing Cu is disposed on a side of said first main surface and a layer containing Au is disposed in an outermost surface layer portion of said metal terminal pad, while a platinum-metal-based layer containing platinum metal a metal selected from the group consisting of Ru, Rh, Pd, Os, Ir and Pt is disposed as a barrier metal layer between said layer containing Cu and said layer containing Au.

8. (original): The wiring board according to claim 6, wherein said platinum-metal-based electroless plated layer is an electroless Pd-plated layer.

9. (original): The wiring board according to claim 6, wherein said platinum-metal-based electroless plated layer is an electroless Ir-plated layer, an electroless Pt-plated layer, an electroless Rh-plated layer or an electroless Ru-plated layer.

10. (original): The wiring board according to claim 6, wherein said platinum-metal-based electroless plated layer has a thickness of 0.05-1 μm .

11. (original): A wiring board comprising:
a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and
a plurality of metal terminal pads disposed on said first main surface,
wherein:
each of said metal terminal pads has a structure in which a Cu-plated layer is disposed on a side of said first main surface and an Au-plated layer is disposed in an outermost surface layer portion of said metal terminal pad, while an Ni-P-based electroless Ni-plated layer in contact with said Cu-plated layer and a P-barrier electroless metal plated layer for blocking or suppressing P-diffusion from said Ni-P-based electroless Ni-plated layer to said Au-plated layer are disposed as barrier metal layers between said Cu-plated layer and said Au-plated layer, said P-barrier electroless metal plated layer being disposed between said Ni-P-based electroless Ni-plated layer and said Au-plated layer.

12. (original): A wiring board comprising:
a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and
a plurality of metal terminal pads disposed on said first main surface,
wherein:

each of said metal terminal pads has a structure in which a layer containing Cu is disposed on a side of said first main surface and a layer containing Au is disposed in an outermost surface layer portion of said metal terminal pad, while a layer containing Ni and P in contact with said layer containing Cu and a layer containing Ni and B are disposed as barrier metal layers between said layer containing Cu and said layer containing Au, said layer containing Ni and B being disposed between said layer containing Ni and P and said layer containing Au.

13. (original): The wiring board according to claim 11, wherein said P-barrier electroless metal plated layer is an Ni-B-based electroless Ni-plated layer.

14. (original): The wiring board according to claim 11, wherein said P-barrier electroless metal plated layer is a platinum-metal-based electroless plated layer.

15. (original): The wiring board according to claim 11, wherein said Au-plated layer is made of an electroless reduction Au-plated layer.

16. (original): The wiring board according to claim 11, wherein said Ni-P-based electroless Ni-plated layer has a thickness of from 2 to 7 μm , and said P-barrier electroless metal plated layer has a thickness of from 0.05 to 2 μm .

17. (original): A wiring board comprising:
a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and
a plurality of metal terminal pads disposed on said first main surface,

wherein:

each of said metal terminal pads has a structure in which a Cu-plated layer is disposed on a side of said first main surface, and an Au-plated layer is disposed in an outermost surface layer portion of said metal terminal pad, while an Ni-B-based electroless Ni-plated layer in contact with said Cu-plated layer and an Ni-P-based electroless metal plated layer thinner than said Ni-B-based electroless Ni-plated layer are disposed as barrier metal layers between said Cu-plated layer and said Au-plated layer, said Ni-P-based electroless metal plated layer being disposed between said Ni-B-based electroless Ni-plated layer and said Au-plated layer.

18. (original): A wiring board comprising:

a wiring laminate portion including dielectric layers containing a polymeric material and conductor layers laminated alternately so as to form a first main surface out of one of said dielectric layers; and

a plurality of metal terminal pads disposed on said first main surface,

wherein:

each of said metal terminal pads has a structure in which a layer containing Cu is disposed on a side of said first main surface, and a layer containing Au is disposed in an outermost surface layer portion of said metal terminal pad, while a layer containing Ni and B in contact with said layer containing Cu and a layer containing Ni and P thinner than said layer containing Ni and B are disposed as barrier metal layers between said layer containing Cu and said layer containing Au, said layer containing Ni and P being disposed between said layer containing Ni and B and said layer containing Au.

19. (original): The wiring board according to claim 17, wherein said Ni-P-based electroless metal plated layer is not thicker than $2 \mu\text{m}$.

20. (original): The wiring board according to Claim 17, wherein said Au-plated layer is made of an electroless reduction Au-plated layer.

21. (original): The wiring board according to Claim 17, wherein said Ni-B-based electroless Ni-plated layer has a thickness of from 2 to $7 \mu\text{m}$, and said Ni-P-based electroless metal plated layer has a thickness of from 0.05 to $2 \mu\text{m}$.

22. (original): A wiring board with solder members, which comprises: the wiring board according to claim 1; and solder balls so that

said metal terminal pads are to be connected to mother-board-side terminal pads through said solder balls respectively, wherein said solder balls contains an Sn alloy whose liquidus temperature is not lower than 200°C .

23. (original): The wiring board with solder members according to claim 22, wherein said solder balls are bonded directly to said metal terminal pads respectively.

24. (original): The wiring board with solder members according to Claim 23, wherein said solder balls contain one of an Sn-Ag-based alloy and an Sn-Cu alloy.

25. (original): The wiring board with solder members according to Claim 23, wherein said solder balls contain an Sn alloy having a Pb content not higher than 5% by mass.

26. (original): A wiring board with solder members, which comprises: the wiring board according to claim 6; and solder balls so that

said metal terminal pads are to be connected to mother-board-side terminal pads through said solder balls respectively, wherein said solder balls contains an Sn alloy whose liquidus temperature is not lower than 200°C.

27. (original): The wiring board with solder members according to claim 26, wherein said solder balls are bonded directly to said metal terminal pads respectively.

28. (original): The wiring board with solder members according to claim 27, wherein said solder balls contain one of an Sn-Ag-based alloy and an Sn-Cu alloy.

29. (original): The wiring board with solder members according to claim 27, wherein said solder balls contain an Sn alloy having a Pb content not higher than 5% by mass.

30. (original): A wiring board with solder members, which comprises: the wiring board according to claim 11; and solder balls so that said metal terminal pads are to be connected to mother-board-side terminal pads through said solder balls respectively, wherein said solder balls contains an Sn alloy whose liquidus temperature is not lower than 200°C.

31. (original): The wiring board with solder members according to claim 30, wherein said solder balls are bonded directly to said metal terminal pads respectively.

32. (original): The wiring board with solder members according to claim 31, wherein said solder balls contain one of an Sn-Ag-based alloy and an Sn-Cu alloy.

33. (original): The wiring board with solder members according to claim 31, wherein said solder balls contain an Sn alloy having a Pb content not higher than 5% by mass.

34. (original): A wiring board with solder members, which comprises: the wiring board according to claim 17; and solder balls so that said metal terminal pads are to be connected

to mother-board-side terminal pads through said solder balls respectively, wherein said solder balls contains an Sn alloy whose liquidus temperature is not lower than 200°C.

35. (original): The wiring board with solder members according to claim 34, wherein said solder balls are bonded directly to said metal terminal pads respectively.

36. (original): The wiring board with solder members according to claim 35, wherein said solder balls contain one of an Sn-Ag-based alloy and an Sn-Cu alloy.

37. (original): The wiring board with solder members according to claim 35, wherein said solder balls contain an Sn alloy having a Pb content not higher than 5% by mass.

38. (new): The wiring board according to claim 7, wherein the platinum-metal-based layer contains a metal selected from the group consisting of Ru, Rh, Pd, Os, Ir and Pt as a chief component.